

**EDUCATIONAL PROJECT**  
**“RIO+20: THORNY PASS TO SUSTAINABILITY”**  
**Devoted to the 25<sup>th</sup> anniversary**  
**of Open Ecological University**

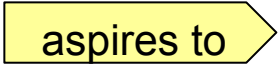
**Art and Environment as media**  
**for Ecosustainability, Ethics and Aesthetics**

**Art,  
that is, cultural and environmental heritage,  
is linked to the history of man**

**Our past is part of our future and  
the future is founded on our past**

This truth is the basis of my didactic activities and research as a technician in the Department of Histories and Methods for the Conservation of Cultural Heritage at the Alma Mater Studiorum University of Bologna, Italy

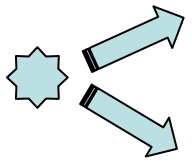
# Ecosustainability, Ethics and Aesthetics

Man  an **ideal world**

*synonymous with*

- justice
- love
- happiness
- beauty

**It is true that there are those dominated by:**



epistemological nihilism  skepticism

ethical nihilism  moral relativism

- lack of value
  - lack of purpose
  - absence of duty
- will  
guilt  
merit  
responsibility

- It follows that man is:
- as an object of science, inside nature
  - as the object of a conscience, outside nature

## Ecosustainability, Ethics and Aesthetics

**So, in the course of his life**

Man works on the basis of these goals and nurtures aspirations and dreams

Science can explain them, modify them, manipulate them, but it is always man who decides

This is what the World Wild Fund asserts, pointing out moreover that

**“Nature does not support the human footprint ”**

This is especially true if one refers to the **Code of Cultural Landscape and Heritage** issued in Italy in 2004 by the Ministry of Cultural Heritage and Activities, which comprises:

- all buildings
- and areas

expressing historical, cultural, natural, morphological aesthetic

values of the territory

Hence the importance of **overcoming the “dichotomy between the economic sphere and the socio-cultural one”** trough ethics respecting others and the **environment** in its entirety: therefore **ecosustainability**

This did not happen in the case of the present: a crisis for the economy and for values

## Art beyond beauty: from aesthetics to ethics

Is art  
synonymous with  
beauty?

In other words,  
Is beauty  
attributable only to  
aesthetics?

And is aesthetics  
all there is to the  
idea of art?

This would be an outdated, decadent idea, belonging to those who dislike or distrust it and believe they can banish it to the farthest corners of the cultural world

On the contrary, **art is never solely or forcedly beautiful**, its vocation is not decorative but metaphysical. There remain curiosity, knowledge, learning and intelligence with their great alchemy, giving a sense or meaning to what has none or showing why its sense or meaning is impossible.

**It can therefore be said that within our perception our  
sense of ethics goes accompanies that of aesthetics**

## Evolution of art and technical-material knowledge over the centuries

A reading of Western art over the years can be based on a critical methodology linked to the evolution of society's technical-material knowledge

But not for this should every work of art be considered as the result of determinism

indeed, starting with common tools each artifice provides its own symbolization represented by the artifact itself

And this can be an expression of society at the time as well as determining an anticipation and opening towards a sense of ethics and meaning through the work of art seen as an epiphany

# Evolution of art and technical-material knowledge over the centuries

Historical periods

Events and knowledge

Modus operandi

Representatives

Roman art

Warfare techniques

Mimetism



# Evolution of art and technical-material knowledge over the centuries

Historical periods

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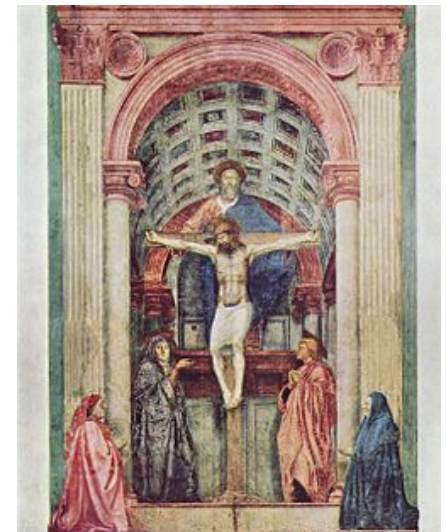
Representatives

Early 1400s

Science of vision

Perspective

Brunelleschi,  
Alberti, Piero  
Della Francesca,  
Masaccio





# Evolution of art and technical-material knowledge over the centuries

Historical periods

Events and knowledge

Modus operandi

Representatives

Renaissance

Great discoveries  
(Christopher Columbus,  
merchants)

Hazy dynamism,  
motions of the soul

Leonardo



# Evolution of art and technical-material knowledge over the centuries

Historical periods

Events and knowledge

Modus operandi

Representatives

1600s

First investigation of the human body parallel to that in anatomy

Frenzied figures

Bernini, Rubens



# Evolution of art and technical-material knowledge over the centuries

Historical periods

Events and knowledge

Modus operandi

Representatives

The break of 1789  
(French Revolution)

Advent of bourgeois society

- painting of great fear
- celebratory (the rise of the new ruling class is metaphorised)

- "Monsters"
- Rediscovery of the classics

Goya, Füssli, Friedrich, David, Ingres



• "Monsters"



• Rediscovery of the classics



# Evolution of art and technical-material knowledge over the centuries

## Historical periods

1800s

## Events and knowledge

Development of thermal energy, the discovery of electricity (Galvani), the battery (Volta)

## Modus operandi

- pathologies of the individual
- popular reality is fixed on canvas
- or escape into an imaginary past

## Representatives

- Géricault
- Coubert
- Preraffaelliti



# Evolution of art and technical-material knowledge over the centuries

**Historical periods**

**Events and knowledge**

**Modus operandi**

**Representatives**

Modern Age

Invention of photography

- Response to the birth of photography
- Impressionism as the final expression of mimetism

Monet

# Evolution of art and technical-material knowledge over the centuries

**Historical periods**

**Events and knowledge**

**Modus operandi**

**Representatives**

1900s

Technological innovation:  
discoveries of  
Marconi, Einstein

Season of the Avant-Gardes:  
painting becomes the witness  
of doctrines elaborated by the  
“masters of suspicion” such as  
relativism, Marxism,  
psychoanalysis

Picasso,  
Chagall,  
Dalì

# Evolution of art and technical-material knowledge over the centuries

Historical periods

Events and knowledge

Modus operandi

Representatives

The Contemporary Art

Everything is more rapid

A return to alternative representations in the arts, (installations, performances,...) together with the renewal of instruments: a transition from traditional to electronic systems

Christo Javacheff, Pollock, Cattelan



## Art between price and value

But today there is another aspect of art which is coming to the fore:  
everything in art must have a price.

The confusion between price and value

– in fact the price is what is paid and the value is what is obtained –

is one of the greatest cultural calamities of our time, as regards price quotes for works of art, whether ancient, modern or contemporary

What is truly important in art is not the pseudoscientific processes, but the moments of intensity, insight and vision that cannot be attributed to a method and cannot be repeated by others, but are the product of the individual artist.

William Blake, vividly sums up the meaning and greatness of art when he says:  
“If the parts of perception were cleansed, everything would appear as it is, infinite”  
and it is the artist who puts us in touch with this process of perception.



And if one passes from this perceptual process to the expert's **evaluation of the conservation state and authenticity of the artifact**, it is essential to underline how this **subjective evaluation** – which comes from a comprehensive knowledge of style, iconography, aesthetics and a participatory, emotional understanding, emanating from the work – **must necessarily be accompanied by an objective evaluation** based on the use of diagnostic and analytical equipment that supports or confutes the former

Reference is made in particular to the authenticity of the work, whether it is an artifact of historical-artistic, archaeological, archival-library or music interest

It is this aspect that gives a real dimension of **“cultural education “** and **“personal ethics”**

From this derive **two interconnected aspects:**

The need to **complete** and **integrate** different skills

**“protection of cultural heritage”**

**Setting limits** for the technical interventions in compliance with a higher instance

**“ethics of conservation and restoration”**

## Interdisciplinarity in the cultural heritage sector

It is crucial today that **experts** from different backgrounds and with different expertise contribute in an interdisciplinary way.

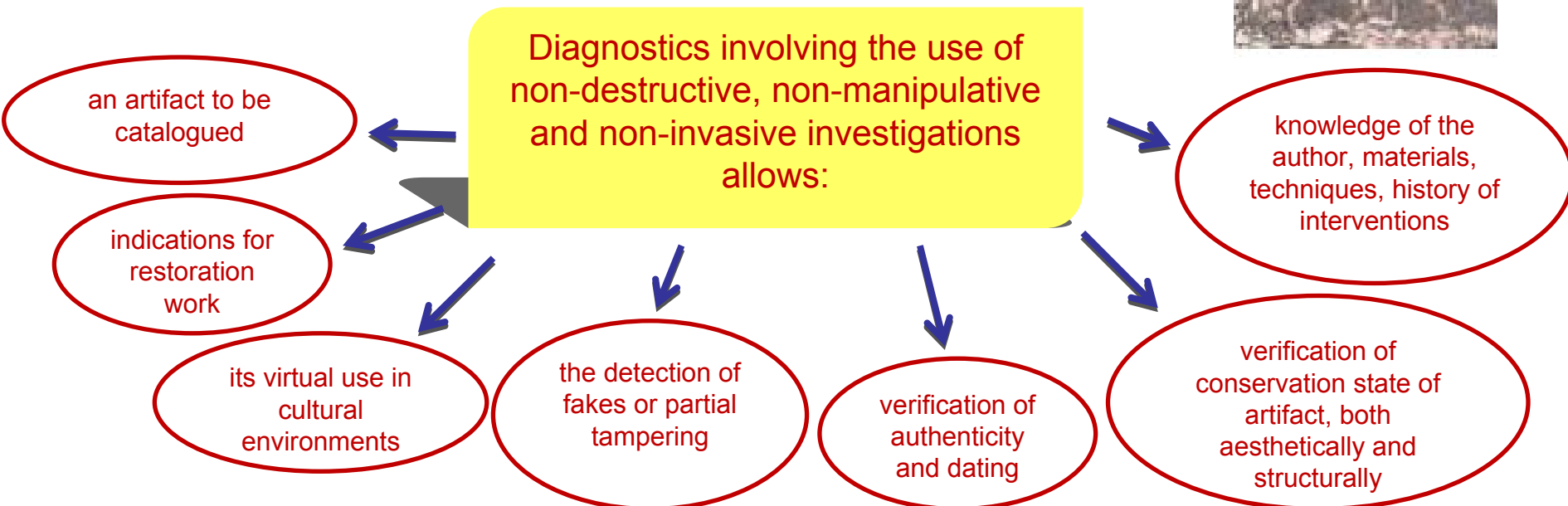
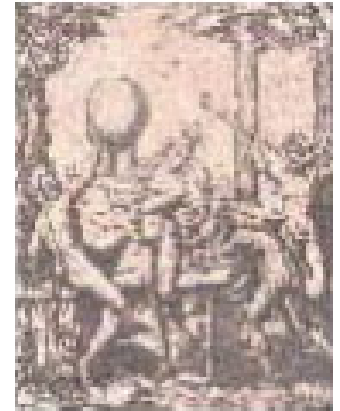
That is to say, it is important for a **professional** with a **historical-humanist** background to complete his training with an input of **technical-experimental** as well as **legal-management** aspects. This will not only enable him to resolve problems concerning the protection and valorization of cultural heritage, but also **compete at a professional level nationally and internationally**, enhancing territorial resources which may potentially be a source of qualified **training**.

# The Faculty for Conservation of Cultural Heritage and the Department of Histories and Methods for the Conservaton of Cultural Heritage

The **Faculty** founded in 1996, together with the **Department** established in 1998, aim to offer historical and technical-experimental support in elaborating strategies and methods for the conservation and valorization of cultural heritage

## The Diagnostic Laboratory for Cultural Heritage

Change Performing Arts, an international company, which organizes artistic and cultural events, in conjunction with the Ministry for Cultural Heritage and Activities (MiBAC) and the National Institute for Foreign Trade (ICE), have recognised **the Diagnostic Laboratory for Cultural Heritage, as being among those of excellence in public Italian institutions and universities.**



## Equipment

-for environmental monitoring

- Electronic thermohygrometers
- Luxmeters
- pHmeter and conductivity meter
- Dry/wet automatic sampler
- Fixed and portable samplers for total suspended particulate matter and fine dust
- Surface moisture meter



- techniques for monitoring artifact

### Principal diagnostic techniques used in relation to different material typologies

Mineral	Metal	Glass-Ceramics-Porcelain	Paints-Inorganic pigments	Organic
-X-ray diffractometry	-X-ray diffractometry	-X-ray diffractometry	-X-ray diffractometry	-IR spectrometry
-X-ray fluorescence	-X-ray fluorescence	-X-ray fluorescence	-X-ray fluorescence	-Gas chromatography
-Spectrometry	-Electron microscopy	-Electron microscopy	-Electron microscopy	
-Electron microscopy	-Isotopic analysis	-Isotopic analysis		
		-Thermoluminescence		

1. Appropriate methodologies and analytical techniques for the characterization of cultural heritage
2. Air pollution and deterioration of monuments and historical and artistic environments
3. Micro and macroclimatic monitoring in confined spaces: Museums, Libraries, Archives
4. Art diagnostics and verification of authenticity
5. Evaluation of the suitability of products used for restoration, conservation and maintenance of cultural heritage

## Case studies : themes

Attribution and state of conservation of a painting, a sculpture and a codex: diagnostics and authentication

State public libraries in Rome:  
assessing their conservation status and quality of life and work

Restoration of the Basilica of St. Peter's: correctness of the intervention

Pollution and degradation of the artifacts

Research on submerged artifacts in underwater archaeology

# Case studies

Attribution and state of conservation of a painting, a sculpture and a codex

Historical anamnesis

Subjective evaluation

Objective evaluation

Results

the case history includes the "historia" of the artifact and the attribution given before our examination

the subjective evaluation refers to the assessment made by the historian (art historian, archaeologist, bibliologist and/or documentalist and/or paleographer)

which accompanies

the objective assessment made by the technician (diagnostician, chemist, conservator, restorer)

*Madonna with child and devotee*



Oil on wood attributed to Alvise Vivarini

Our subjective-objective evaluation confirmed the attribution made before our examination

*Madonna with child*



Marble sculpture attributed to Francesco Laurana

Our subjective-objective evaluation confuted the attribution made before our examination

*Dante codex*



Parchment palimpsest manuscript

Our subjective-objective evaluation contributed to increasing its historical-documental value and therefore its cultural value, determining its consequent economic commodity value

## The diagnostic technologies employed :



Visible,  
infrared,  
ultraviolet  
photography



Microscopy



Infrared  
reflectography



Videomicroscopy  
for image analysis



X-ray  
diffractometry



X-ray  
fluorescence



Fourier transform  
infrared  
spectrophotometry



Colorimetry



Thermohygrometry

- **Book series “Cultural Heritage and Environment”**  
 (“I Beni Culturali e l’Ambiente”)

### Presentazione della Collana “I Beni Culturali e l’Ambiente”

diretta da Salvatore Lorusso



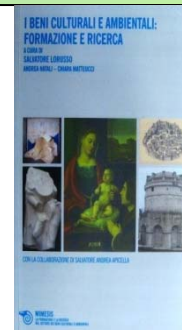
Topic covered:

- knowledge of materials
- knowledge of the environment
- scientific methodologies
- interventions for protection and valorization

The 11 volumes include both general and specialist subjects.

- **Book series “Training and Research in the Sector of Cultural and Environmental Heritage”**  
 (“La Formazione e la Ricerca nel Settore dei Beni Culturali e Ambientali”)

The first volume contains presentations given by experts who participated in several Study Days held recently on this subject





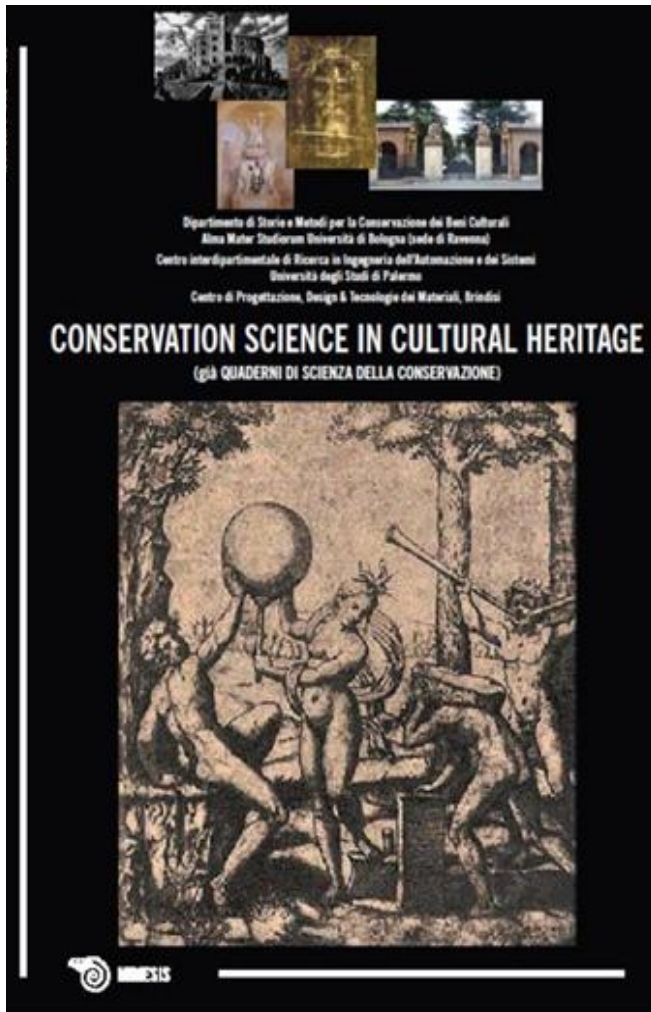
● **Master in “Planning and Promotion of Artistic and Cultural Events”**  
activated by the Faculty for the Conservation of Cultural Heritage  
University of Bologna

The following are actively involved:

- Cultural Units (Museums, Libraries, Archives, Foundations)
- Research Centres (Centre for Planning, Design and Materials Technologies, Brindisi; Interdepartmental Research Centre for Automation Systems Engineering, University of Palermo)
- Productive Units ( Banks, Companies, Firms )
- Ministries ( Ministry for Education, University and Research, Ministry for Cultural Heritage and Activities )

The Master is designed for all those who for work or for personal interest wish to improve their knowledge related to technical, legal, managerial, economic, and marketing issues in the specific sector.

- **Historical-technical Journal**  
**“Conservation Science in Cultural Heritage”**  
available in hardcopy and online



edited by:

- Department of Histories and Methods for the Conservaton of Cultural Heritage  
Alma Mater Studiorum University of Bologna, Italy ;
- Interdepartmental Research Centre for Automation and Systems Engineering, University of Palermo;
- Centre for Planning, Design and Materials Technologies, Brindisi

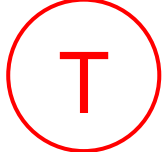
It has responded to issues regarding both interdisciplinarity and internationalisation.

The Journal has a Creative Commons License and has been given the opportunity of applying the **SPARC** “seal” (Scholarly Publishing and Academic Resources Coalition): important certification for “open access” journals.

The Journal is accessible online and has been included in several international websites and platforms EBSCO Publishing and HW Wilson Company (USA)

**Conclusion**

**The driving force of the three **T**s**

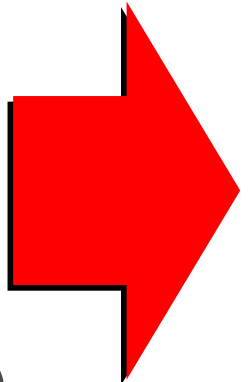


• **research**

• **culture**

• **economy**

- Talent
- Technology
- Tolerance



*that is to say  
human,  
scientific  
and social  
resources*



*the achievement of  
specific objectives  
starts with this and with  
the presence of a new  
social category:  
**The creative class***



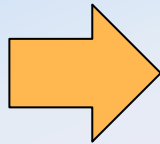
*This class – whether composed of experts from experimental sciences or scholars from human science – share values of*

- *individuality*
- *difference*
- *merit*

**Initially I underline:**

<< There is no doubt that **“past”** means

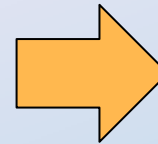
- treasure
- experience
- heritage
- enrichment
- education



**In research  
and training >>**

<< There is also no doubt

That one must necessarily think  
on the **“present”** in relation to  
and in function of the **“future”**



**in particular in the  
field of cultural and  
environmental  
heritage >>**